Uji dan Aplikasi Komputasi Paralel pada Jaringan Syaraf Probabilistik (PNN) untuk Proses Klasifikasi Mutu Tomat

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Abstrak

Tomato fruit is one of agroproducts that has high-economic value in the world particularly in Indonesia. To compete in a worldwide market a tomato fruit producer must produce fresh or processed tomato with high quality. High quality tomato products are influenced by the application of post-harvest treatment or processing. One of the vital process in post-harvest treatment is sortation. Mannual sortation introduces subjectivity (bias), inaccuracy, slowness and inconsistency. This needs more intelligent sortation methods and tools that overcome the sort comings of manual process. Probabilistic Neural Network (PNN) is one of Artificial Neural Network (ANM variants that can be to develop a computer-based sortation engine for tomato fruits. However, to accelerate the sortation process, parallel computation is employed allowing multiple processors to execute simultaneously the sortation process. This research is aimed towards the implementation and testing of a parallel computation algorithm with PNN to perform sortation for tomato fruits. Some criteria being observed and tested include accuracy, total execution time, speedup, and efficiency compared to sequential algorithm. The experimental results show that the application of parallel computation algorithm with PNN introduces the increase of accuracy, total execution time, speedup, and efficiency with the same accuracy.